

WHAT IS CLAIMED IS:

- 1 1. A method for detecting electrostatic charges on a wafer surface, comprising the steps of:
 - 2 (a) disposing a capacitor plate above a wafer surface on which electrostatic charges are
3 to be scanned;
 - 4 (b) using a movable probe to measure voltages at various locations at the capacitor plate;
 - 5 (c) collecting the measured voltage distribution; and
 - 6 (d) examining the collected voltage distribution to identify areas on the wafer surface
7 correspondingly to high electrostatic charge density.
- 1 2. The method for detecting electrostatic charges on a wafer surface according to claim 1,
2 wherein the wafer contains a dielectric layer at its outmost surface.
- 1 3. The method for detecting electrostatic charges on a wafer surface according to claim 2,
2 wherein the dielectric layer is an oxide layer.
- 1 4. The method for detecting electrostatic charges on a wafer surface according to claim 1,
2 wherein the method is performed following a cleansing step using pure water or de-ionized
3 water to remove particles or other impurities on the wafer surface.
- 1 5. The method for detecting electrostatic charges on a wafer surface according to claim 1,
2 wherein the capacitor plate is structured such that it can be moved both vertically and

3 horizontally above the wafer surface.

1 6. The method for detecting electrostatic charges on a wafer surface according to claim 1,
2 wherein the capacitor plate is made of a plurality of capacitor sub-plates electrically
3 insulated from each other.

1 7. A method for detecting electrostatic charges on a wafer surface, comprising the steps of:

2 (a) disposing a capacitor plate above a wafer surface on which electrostatic charges are
3 to be scanned;

4 (b) attaching a probe on the capacitor plate;

5 (c) moving the capacitor plate horizontally above the wafer surface so as to allow the
6 probe to measure voltages at various locations above the wafer surface;

7 (d) collecting the measured voltage distribution; and

8 (e) examining the collected voltage distribution to identify areas on the wafer surface
9 correspondingly to high electrostatic charge density.

1 8. The method for detecting electrostatic charges on a wafer surface according to claim 7,
2 wherein the wafer contains a dielectric layer at its outmost surface.

1 9. The method for detecting electrostatic charges on a wafer surface according to claim 8,
2 wherein the dielectric layer is an oxide layer.

- 1 10. The method for detecting electrostatic charges on a wafer surface according to claim 7,
2 wherein the method is performed following a cleansing step using pure water or de-ionized
3 water to remove particles or other impurities on the wafer surface.
- 1 11. The method for detecting electrostatic charges on a wafer surface according to claim 7,
2 wherein the capacitor plate is structured such that it can be moved both vertically and
3 horizontally above the wafer surface.
- 1 12. An apparatus method for detecting electrostatic charges on a wafer surface, comprising the
2 steps of:
- 3 (a) movable capacitor plate to be placed above a wafer surface on which electrostatic
4 charges are to be scanned;
- 5 (b) a movable probe to measure voltages at various locations at the capacitor plate; and
- 6 (c) a recorder to collect and record the measured voltage distribution.
- 1 13. The apparatus for detecting electrostatic charges on a wafer surface according to claim 12,
2 wherein the wafer contains a dielectric layer at its outmost surface.
- 1 14. The apparatus for detecting electrostatic charges on a wafer surface according to claim 13,
2 wherein the dielectric layer is an oxide layer.

1 15. The apparatus for detecting electrostatic charges on a wafer surface according to claim 12,
2 which is to be performed following a cleansing step using pure water or de-ionized water to
3 remove particles or other impurities on the wafer surface.

1 16 The apparatus for detecting electrostatic charges on a wafer surface according to claim 12,
2 wherein the capacitor plate is structured such that it can be moved both vertically and
3 horizontally above the wafer surface.

1 17. The apparatus for detecting electrostatic charges on a wafer surface according to claim 12,
2 wherein the capacitor plate is made of a plurality of capacitor sub-plates electrically
3 insulated from each other.